

~~WO 2005/005630~~

~~2/23~~

~~PCT/EP2004/007606~~



~~ipi (SEQ ID NO 2)~~ (SEQ ID NO: 1 + 2)

ATCTATATAGTTAATGAAT'AATTAAATGTACTTTT'TTAGTTAGTCA'TTAAATAAATTAGTACTAATTACT

AAAGGAGAAATAAAAAATGAAAAATCTATACTTGGGGAACTTTAGCAATCGTTTTAGCATCACCAC

TTAGTAACTAATCTAGATAAAATGAGGCACAAGCTAGCACAAGCTTGCCAAACATCGAATGAATATCAAACG

AAAAGTTAGCTAATGAATTAAATCGTTATTAGATGAACATAAATGTTAATGAATTAGCTACTGGAAGTTTAA

H

ACACTTATTATAAGCGAACTATAAAATTTTCAGGTCAAAAGCAATGTATGCTCTTAAGTCAAAGACTTTTA

AGAAATGTCAGAGCAAAATATCAACTTCAAAGATTTATAACGAAATTGACGAAGCACTAAAAGTAAAT

ATTAAAAACCAACCGTAAAGGGTGTTTAATTTCTAGATAATAAAGTGTTCATAATAAACAG

TATAGG

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WO 2005/005630

9/23

PCT/EP2004/007606

Figure 2b

~~LpiB (SEQ ID NO: 4)~~ (SEQ ID NO: 9)
 GGAGAGTTTACAAATGAAATTTAAAAAATATATATTAACAGGAAACATTAGCAT
 TACTTTTATCATCAACTGGGATAGCAACTATAGAGGGAATAAAGCAGATG
 CAAGTAGICTGACAAATATTTAACTGAAAGTCAGTTTCATGATAAACGCA
 TAGCAGAAGAAATTAAGAACTTTACTTAACAAATCGAATGTATATGCAATTAG
 CTGCAGGAAGCTTAAATCCATATTTAAACGCTACGATTATGATGAATGAAT
 ATAGAGCTAAAGCGGCACCTTAAGAAAAATGATTCGGTATCAATGGCTGATG
 CTAAGTTGCAATAGAAAAAATATACAAAGAAATTGATGAAATTAATAATA
 GATAAT

~~LpiC (SEQ ID NO: 6)~~ (SEQ ID NO: 10)
 GGAGAAATTACAATGAAATTTAAAAAATATATAGTAGCAGGAACATTAGCAGTACTATATCAACACAGCAGTATCAACGTTAGATGGGAA
 TAAAGCAGATGCAAGTAGTAAGAAAGACATATATTAATTCAAAGTGAGTTTCATGATAAACGAATTCGTGAAGAAATTTGAAATCATTACTTTGATC
 AATCTTATGTAATGATTTAGCTGCAGGAAGCTTAAACCCATACTACAAACGTTATGATGTAACCAATATAGAGCAAAAGCAGCACTA
 AAAAGTAATAATTTCCGCAAAAATGGCTGAAGCTTAAAGTTGGATTAGAAAAACATTTACAAAGAAATTGATGAAATTTATTAATAGATAAT

~~LpiD (SEQ ID NO: 8)~~ (SEQ ID NO: 11 + 12)
 GGAGTAACAAAGCATGACACACAAATGAAAAATCAAAAACATTTAGTTGCTGGTATTAAAGCGCGCTCCTTGATACGACTGGTATTAAA
 TTAGCAAGCAAAATCTGAACACTACATACATACGTTATCAACATCAAGCGCTTGATGATCAATTAATGATGAATTAATAGCAAAACACTGACTTTAA
 TAAATATCGTACCTAAATTTAGATGCGTTTCAAAAACCGGATATTTTAGCTGGCCTATATTCGCAAAATCCGCTATACGCACTAAAAATTT
 T
 G
 GGATCAAAATGACTAAACCGGAACAAAGATTAGAAAGTATTACAAATTCATACCCCTTTCGATTCACAAAAACAATTAATAATTCA

REPLACEMENT SHEET

WO 2005/005630

4/23

PCT/EP2004/007606

Figure 3

LPI (116aa) ~~(SEQ ID NO: 3)~~ (SEQ ID NO: 3 + 4)

MKIRKSILAGTIAIVLASPLVTNLDKNEAQASTSLPTSNEYQNEKLANELKSLLDLNVNELATGSLNTYYK

L

RTIKISGQKAMYALKSKDFKMSSEAKYQLOKIYNEIDEALKSKY

LPI-B (116aa) (SEQ ID NO 5)

MKEKKYIILTGILALLSSTGIATIEGNKADASSLDKYLTESQFHDKRIAEELRTLKNSNVYALAAAGSLNPYYKRTIMMNEYRAKAALKKNDFVSMADAKVALEKIYKEIDEIINR

LPI-C (116aa) ~~(SEQ ID NO: 7)~~ (SEQ ID NO: 6)

MKEKKYIVAGTILAVLLSTTAVSTLDGNKADASSKKDYIIQSEFHDKRIAEELKSLLDQSYVNDLAAGSLNPYYKRMIMMNOYRAKAALKSNNEFAKMAEAKVGLNENIYKEIDEIINR

LPI-D (114aa) ~~(SEQ ID NO: 9)~~ (SEQ ID NO: 7 + 8)

MTQMKIKTYLVAGIKAALLDTTGICKLASKSETTTSHTYQHQAALVDQLHELIAINTDLNKLSTYLNLDQFQK

H D

RDILAAHYIAKSAIRTKNLDQMTKAKQORLESINSNPLHSQNN

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FIG. 2A

lpi (SEQ ID NO:1 AND 2)

ATCTATATAGTTAATGAATAATTAAATGTAATTTTTTTTAGTTAGTCATTAAAAATAAATTAGTACTAATTACT

AAGGAGAAATAAAAAATGAAAAATTAGAAAAATCTATACTTTGCGGGAACTTTAGCAATCGTTTTTAGCATCACCAC

TAGTAACTAATCTAGATAAAAAATGAGGCACAAGCTAGCACAAAGCTTGCCCAACATCGAATGAATATCAAAAACG

AAAAAGTTAGCTAATGAATTAAAAATCGTTATTAGATGAACATAAATGTTAATGAATTAGCTACTGGAAGTTTAA

T

ACACTTATTATAAGCGAACTATAAAAAATTTTCAGGTCAAAAAGCAATGTATGCTCTTAAAGTCAAAAAGACTTTA

AGAAAAATGTCAGAAAGCAAAATATCAACTTCAAAAAGATTTATAACGAAATTCAGGAAGCACTAAAAAAGTAAAT

ATTAAAAAAACCAACCGTAAAAGGGTGGTTTAAATTTCTAGATAATAATAAAGTGTTCTAATAATAAAAAACAG

TATAGG

FIG. 2B

Figure 2b

LpiB (SEQ ID NO:9)

GGAGAGTTTACAATGAAATTTAAAAATATATATTAACAGGAACATTAGCAT
TACTTTTATCATCAACTGGGATAGCAACTATAGAAGGGAATAAGCAGATG
CAAGTAGTCTGGACAAATATTTAACTGAAAGTCAGTTTCATGATAAACGCA
TAGCAGAAGAATTAAGAACTTTACTTAACAAAATCGAATGTATATGCATTAG
CTGCAGGAAGCTTAAATCCATATATATAACGTACGATTATGATGAATGAAT
ATAGAGCTAAAGCGGCACTTAAGAAAAATGATTCGTATCAATGGCTGATG
CTAAAGTTGCATTAGAAAAATATACAAGAAATTGATGAAATTTATAAATA
GATAAT

Lpic (SEQ ID NO:10)

GGAGAATTTACAATGAAATTTAAAAATATATATAGTAGCAGGAACATTAGCAGTACTATTATCAACAACAGCAGTATCAACGTTAGTGGGAA
TAAAGCAGATGCAAGTAGTAAGAAAGACTATATAATTCAAAGTGAGTTTCATGATAAACGAATTGCTGAAGAATTGAAATCATTACTTGATC
AATCTTATGTAATGATTTAGCTGCAGGAAGCTTAAACCCATACTACAAACGTATGATTATGATGAACCAATATAGAGCAAAAGCAGCACCTA
AAAAGTAATAATTTCCGAAAAATGGCTGAAGCTAAAGTTGGATTAGAAAAACATTTACAAAGAAATTGATGAAATTTATAAATAGATAAT

Lpid (SEQ ID NO:11 AND 12)

GGAGTAACAAAGCATGACAAACACAAATGAAATCAAAACATATTTAGTTGCTGGTATTAAAGCGGCGCTCCTTGATACGACTGGTATTAAA
TTAGCAAGCAAACTGAAACTACATCAGTATCAACATCAAGCGCTTGTAGATCAATTACATGAATTTAATAGCAACACACTGACTTAAA
TAAATTATCGTACCTAAATTTAGATGCGTTTCAAAAACGGGATATTTAGCTGGCAGCTATATTGCAAAATCCGCTATACGCACTAAAAATTT

GGATCAAATGACTAAAGCGAAACAAAGATTAGAAAGTATTACAAATTCATACCCCTTTGCATTCACAAAAACAATTATAATTCA
T G

FIG. 3

LPI (116aa) (SEQ ID NO: 3 AND 4)

MKIRKSILAGTLAIVLASPLVTNLDKNEAQAASLPTSNEYQNEKLANELKSLDELNVNELATGSLNTYYK

L

RTIKISGQKAMYALKSKDFKRMSEAKYQLQKIYNEIDEALKSKY

LPI-B (116aa) (SEQ ID NO 5)

MKEKKYILTGTLLALLSSTGIATIEGNKADASSLDKYLTESQFHDKRIAEEELRTLNKSINVYALAAGSLNPYYKRTIMMNEYRAKAAALKKKNDFVSMADAKVALEKIYKEIDEIINR

LPI-C (116aa) (SEQ ID NO: 6)

MKEKKYIVAGTLAVLLSTTAVSTLDGNKADASSKKDYIIQSEFHDKRIAEEELKSLDQSYVNDLAAGSLNPYYKRMIMMNQYRAKAAALKSNFNAKMAEAKVGLENIYKEIDEIINR

LPI-D (114aa) (SEQ ID NO: 7 AND 8)

MTTQMKIKTYLVAGIKAALLDTGIKLASKSETTSHTYQHQAALVDQLHELIAINTDLNKLSYINLDAFOK

H D

RDILAAHYIAKSAIRTKNLDQMTKAKQRLSIYNSISNPLHSQNN